A CUMULATIVE INDEX

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AERONAUTICAL ENGINEERING

A SPECIAL BIBLIOGRAPHY

JANUARY 1978
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SPECIAL NOTICE

The abstract sections of the monthly supplements of *Aeronautical Engineering* can be bound separately. Individual abstracts can be located readily by means of the page numbers given at each entry, e.g., p331 N77-23063. To assist the user in binding Supplements SP-7037 (80) through SP-7037 (91), a title page is included in the back of this Cumulative Index.
This Cumulative Index supersedes the indexes contained in supplements SP-7037 (80) through SP-7037 (91).
INTRODUCTION

WHAT THIS CUMULATIVE INDEX IS

This publication is a cumulative index to the abstracts contained in NASA SP-7037(80) through NASA SP-7037(91) of Aeronautical Engineering A Special Bibliography NASA SP-7037 and its supplements have been compiled through the cooperative efforts of the American Institute of Aeronautics and Astronautics (AIAA) and the National Aeronautics and Space Administration (NASA) Entries prepared by the two contributing organizations are identified as follows

1 NASA entries by their STAR accession numbers (N77-10000 series)
2 AIAA entries by their IAA accession numbers (A77-10000 series)

HOW THIS CUMULATIVE INDEX IS ORGANIZED

This Cumulative Index includes a subject index, a personal author index, a corporate source index, a contract number index, and a report/accession number index

HOW TO USE THE SUBJECT INDEX

Two types of cross-references appear in the subject index

1 Use (U) references indicate that the subject term is not "postable," i.e., not a valid term, and the following term or terms are used instead For example

AIRCRAFT PROTUBERANCES
U PROTUBERANCES
FLIGHT PERFORMANCE
U FLIGHT CHARACTERISTICS

2 Narrower Term (NT) references refer the user to more specific headings in the same subject area, under which additional material on the subject may be found For example

FLOW RESISTANCE
NT AERODYNAMIC DRAG
NT FRICTION DRAG
NT SUPersonic DRAG

In addition, a searcher may use the title or title and title extension in the index to narrow further his quest for particular items This is because subject terms readily include more than one class of document For example

AIRLINE OPERATIONS
All-weather operations, including
pilot role, instrument landing
systems and guidance aids
Airport congestion as constraint on
air travel, considering runway
capacity and adjusted demand

illustrates a case where two references on different topics are listed under the same subject term
HOW TO USE THE PERSONAL AUTHOR INDEX

All personal authors used in the abstract-section citations in the individual Supplements appear in the index. Differences in transliteration schemes may require multiple searching of the index for variants of an author’s name. For example

EMELIANOV, M D
and
YEMELYANOV, M D

HOW TO USE THE CORPORATE SOURCE INDEX

The corporate source index entries are abridged versions of the corporate sources used in the abstract-section citations in the individual Supplements. The corporate source supplementary (organizational component) does not appear in the index. For example

BOEING CO., SEATTLE, WASH. MILITARY AIRCRAFT SYSTEMS DIV

(Source citation entry)

BOEING CO., SEATTLE, WASH

(Source index entry)

HOW TO USE THE CONTRACT NUMBER INDEX

All contract numbers that are identified in the abstract-section citations in the individual Supplements appear in this index. Changes by agencies in the style in which contract numbers are presented may require multiple searching for variants. For example

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HOW TO USE THE REPORT/ACCESSION NUMBER INDEX

All report numbers that have been assigned by the corporate source, monitoring agency or cataloging activity appear in this index. Variations in initial cataloging may result in different report number series. For example

TP-924
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IDENTIFICATION OF DESIRED SUPPLEMENT

The abstract and descriptive cataloging for any accession number selected from the indexes may be found in the appropriate Supplement. The page-number range of each Supplement appears on the inside front cover of this index. Once the range of page numbers containing the selected accession number is located in the second column, the desired Supplement number will be found in the first column. For example

Page 331 will be found in Supplement 86

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MT ALLOYS

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MT HIGH STRENGTH STEELS

MT INCOHEL (TRADEMARK)

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MT MAGNESIUM ALLOYS

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AC GENERATORS

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Chief of Staff of the U.S. Army

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TWA L-1011 aircraft fire - Logan International Airport, Boston, Massachusetts, U.S.A., 20 April 1974

Productivity aspects of advanced composites for an L-1011 Aileron

Producibility aspects of advanced composites for an L-1011 aileron. I

Producibility aspects of advanced composites for an L-1011 aileron. II

Laminar Boundary Layer Separation

Laminar Flow

Linear Stable Flow

Experimental study of cooling effectiveness of a laminar two-dimensional tangential film in a hypersonic flow

KABBAH VOBTEX STREET

1-1011 AIBCBAFT

KABBAH VOBTEX STREET

Flow-induced vibrations resulting from Karman vortex trails

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Generalized Theodorsen selection for singular integral equations of the airfoil class

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LATERAL STABILITY

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LAUNCH BASICS

LAUNCH VEHICLES

ST RECOVERABLE LAUNCH VEHICLES
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LAUNCHERS

MT AIR LAUNCHING
MT ROCKETS LAUNCHING
MT SST LAUNCHING
MT SPACECRAFT LAUNCHING
Selection of optimum BPV operational launch and recovery techniques

LAUNCHING

AIR LAUNCHING
ROCKET LAUNCHING
SST LAUNCHING
SPACECRAFT LAUNCHING

LAUNCHES

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LAWS

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The impulse response method for the calculation of the rms value of an aircraft's performance and speed is a significant topic in the field of aeronautics. Review of optical techniques with respect to atmospheric turbulence and normal acceleration due to Gaussian random propagation can provide valuable insights into the design and operation of high-speed aircraft. The effect of engineering approximations on the potential incompressible flow in compressor cascade walls is another critical area of study.

An analysis of the stability of blade rims under conditions of random actions and some mathematical aspects of air traffic systems can offer new approaches to the response of an aircraft encountering non-Gaussian atmospheric turbulence. The calculation of the rms value of an aircraft's performance and speed is a significant topic in the field of aeronautics. Review of optical techniques with respect to atmospheric turbulence and normal acceleration due to Gaussian random propagation can provide valuable insights into the design and operation of high-speed aircraft. The effect of engineering approximations on the potential incompressible flow in compressor cascade walls is another critical area of study.

Random vibration analysis can provide new insights into the stability of blade rims under conditions of random actions and some mathematical aspects of air traffic systems. The calculation of the rms value of an aircraft's performance and speed is a significant topic in the field of aeronautics. Review of optical techniques with respect to atmospheric turbulence and normal acceleration due to Gaussian random propagation can provide valuable insights into the design and operation of high-speed aircraft. The effect of engineering approximations on the potential incompressible flow in compressor cascade walls is another critical area of study.

Random noise experience related to the development of high-stress carbon fiber-reinforced plastic structures, taking into account the example of a supersonic inlet ramp. The development of the MRS-2 System of DDSM in the USA for range measurement can be considered a significant milestone in the field of navigation technology. The use of standardized sequences of flight-by-flight load spectra in fatigue testing of structural aircraft components is another area of research that can contribute to the improvement of aircraft design and performance.

The relative performance of con-scan, COS90 and two-axis monopulse in air-to-ground ranging -- range errors in radar scanning is a topic of ongoing research. Position location systems technology is a rapidly advancing field with applications in various domains, including transportation and military operations.

Use of standardized sequences of flight-by-flight load spectra in fatigue testing of structural aircraft components is another area of research that can contribute to the improvement of aircraft design and performance. The use of a unified curve of corrections to Pitot tube readings in a rarefied supersonic flow is a topic of ongoing research with implications for flight dynamics and sensor accuracy.
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GENERAL PRINCIPLES OF AUTOMATIC TV TRACKERS

The AN/OJ.D-1 electronic camera BP-OC airborne antenna tilting experiments over radar microwave links showed promising results in aircraft height and reconnaissance camera system for high-speed, low-altitude aircraft. A method for measuring aircraft height and velocity using dual television cameras was developed. The new DTC Time Signals Coordinated Universal Time for fire control and missile tracking. The aircraft passenger compartment as a temperature-regulated plant is a critical aspect of aircraft design. Cooling methods for aircraft electronics equipment, such as centralized vacuum systems for temperature/altitude chambers, are essential.

EFFECTS OF TEMPERATURE ON AVIONICS RELIABILITY

Effects of temperature on avionics reliability and limitations of reliable laminar flow control panels were studied. Compressible flow, temperature and life utilization of liquid crystals in aerodynamic components and applications to a teetering rotor in forward flight were also discussed. The aircraft cabin as a temperature-controlled plant and related issues are important considerations.

EJECTOR PERFORMANCE AT HIGH TEMPERATURES AND COMBUSTION OF HYDROGEN

Influence of fuel temperature on supersonic mixing and combustion of hydrogen was studied. Inlet Reynolds number and temperature effects on nozzle afterbody drag at transonic Mach numbers were also examined. High-performance liquid rocket engines require careful consideration of these effects.

TELEVISION EQUIPMENT

Television cameras for airborne use were developed. A simple technique for making long range imaging and surveillance systems was described. General principles of automatic TV trackers for fire control and missile tracking were also discussed. Inlet Reynolds number and temperature effects on rocket nozzle afterbody drag at transonic Mach numbers were highlighted.

United's experience with computer generated visual systems, April 1977 -- for aircraft cockpits and digital generation of contour maps for raster scan display were highlighted.

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Television systems included the use of television cameras and related equipment. General principles of automatic TV trackers were also discussed. The aircraft passenger compartment as a temperature-controlled plant is a critical aspect of aircraft design.
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lifting plate in viscous hypersonic flow

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Development of method for mobilization of thin-wall fuselage-type reinforced shells and construction of a practical calculation algorithm

Deutsche Gesellschaft fuer Luft- und Raumfahrt, Shell Buckling Meeting, Neunkirchen, West Germany, April 29, 30, 1976, Reports and Discussion Contributions

Thin shell caloricimetric techniques for transition detection at ablation temperatures

Calculation of multi-contour thin-walled structures by the method of sections

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**Notes:**
- This table includes a variety of topics related to aerospace engineering, including aerodynamics, flutter, turbulence, and structural analysis.
- The authors listed cover a range of research areas, from performance analysis and emissions to detailed investigations into fatigue strength and structural stability.
- The references provided are indicative of the depth and diversity of research in the field, covering both theoretical and experimental aspects.

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### Additional Information
- **PROJ SQID**: 0036 W77-11059
- **PROJCT**: 0010 W77-17617
- **BB-BLD**: W77-29774

**General Notes:**
- For detailed project information, refer to the index above.
- Additional contracts and specifications may be available upon request.

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**Contact Person:** [Contact Information]

**For Updates:** Please check the latest version on [Website Link].

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**References:**
- [Contract Specifications Manual]
- [Project Status Report]
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A Special Bibliography

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